

Prospectus Supplement No. 12  
(to Prospectus dated March 26, 2012)

## MEI PHARMA, INC.

### 2,915,152 Shares of Common Stock at \$1.19 Per Share Upon Exercise of Outstanding Warrants

This prospectus amends and supplements the prospectus dated March 26, 2012 (the "Prospectus"), which forms a part of our Registration Statement on Form S-1 (Registration Statement No. 333-179590). This prospectus supplement is being filed to update and supplement the information included or incorporated by reference in the prospectus with the information contained in our Current Report on Form 8-K, filed with the Securities and Exchange Commission on November 7, 2012 (the "Form 8-K"). Accordingly, we have attached the Form 8-K to this prospectus supplement.

The prospectus and this prospectus supplement relate to (i) our distribution, at no charge, to holders of our common stock, \$0.0000002 par value per share (our "Common Stock"), as of 5:00 p.m., Eastern time, March 30, 2012 (the "Record Date"), of subscription rights (the "Rights"), to purchase up to 17,129,361 Units for an aggregate purchase price of up to \$7.6 million (the "Rights Offering") and (ii) the issuance of shares of Common Stock upon exercise of the Warrants (as defined below). The subscription period for the Rights Offering expired on May 11, 2012. Each Unit consisted of 0.50 shares of Common Stock and a warrant ("Warrant") representing the right to purchase 0.25 shares of Common Stock at an exercise price of \$1.19 per share. The exercise of one Right entitled holders to purchase one Unit at a subscription price of \$0.445 per Unit, which represents the subscription price of \$0.89 per whole share of Common Stock for two Units. In the Rights Offering, eligible participants exercised Rights to purchase 11,660,606 Units; accordingly, the Company issued 5,830,202 shares of Common Stock and Warrants to purchase an additional 2,915,152 shares of Common Stock. Gross proceeds of \$5.2 million were received in connection with the Rights Offering.

Our common stock is traded on the Nasdaq Capital Market under the symbol "MEIP". The Warrants will not trade on the Nasdaq Capital Market or any other securities exchange or trading market. On November 6, 2012, the closing price for a share of our Common Stock on the Nasdaq Capital Market was \$1.13 per share.

**Investing in our Common Stock involves risks. See "Risk Factors" beginning on page 16 of the Prospectus to read about factors you should consider before you make your investment decision.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.**

The date of this Prospectus Supplement No. 12 is November 7, 2012

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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

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**FORM 8-K**

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**CURRENT REPORT**

**Pursuant to Section 13 or 15(d) of the  
Securities Exchange Act of 1934**

**Date of Report (Date of earliest event reported): November 6, 2012**

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**MEI Pharma, Inc.**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**000-50484**  
(Commission  
File Number)

**51-0407811**  
(I.R.S. Employer  
Identification No.)

**11975 El Camino Real, Suite 101, San Diego, California 92130**  
(Address of principal executive offices) (Zip Code)

**Registrant's telephone number, including area code: (858) 792-6300**

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
  - Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
  - Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
  - Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
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**Item 8.01 Other Events.**

On November 6, 2012, MEI Pharma, Inc. (the “Company”), announced that preliminary data from a pilot Phase II clinical trial of the Company’s investigational oral histone deacetylase (HDAC) inhibitor, Pracinostat, in combination with azacitidine in patients with advanced myelodysplastic syndrome (MDS) has been accepted for poster presentation at the American Society of Hematology Annual Meeting on December 10, 2012. An abstract of the presentation, entitled “Very high rates of clinical and cytogenetic response with the combination of the histone deacetylase inhibitor Pracinostat (SB939) and 5-azacitidine in high-risk myelodysplastic syndrome,” was submitted by Dr. Quintás-Cardama and Dr. Garcia-Manero of the MD Anderson Cancer Center.

Based on these data and the Company’s planned equity financing announced on November 5, 2012, the Company expects to be in a position to initiate a randomized Phase II trial of Pracinostat in combination with azacitidine in patients with MDS by the second quarter of 2013.

Signature

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

MEI PHARMA, INC.

By: /s/ Daniel P. Gold

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Daniel P. Gold

President and Chief Executive Officer

Dated: November 7, 2012